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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/651,288 | 08/30/2000 | Hidefumi Yoshida | 0610.64705 | 2568 |

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| EXAMINER | |
|---|---|
| NGUYEN, CHANH DUY | |
| ART UNIT | PAPER NUMBER |
| 2675 | |

DATE MAILED: 05/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/651,288 | YOSHIDA ET AL. | |
| | Examiner | Art Unit | |
| | Chanh Nguyen | 2675 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *14 February 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *51-53,55-58,60 and 114* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *60* is/are allowed.

6)☒ Claim(s) *51-53,55-58 and 114* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.



FW

## DETAILED ACTION

1. The amendment filed on February 14, 2005 has been entered and considered by examiner.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 51-53, 55-58 and 114 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 114 recites that "wherein said impulse control is carried out when said display image is shown with all the pixel electrodes of the liquid crystal panel during said predetermined period and is a moving image". No where in the specification describes the limitation above. Furthermore, the claim recites that "an impulse control function in which image to be displayed with each of the pixel electrode is output in a predetermined period within the first period". The claimed also recited the first period is a one frame period . No where in the specification discloses the impulse control is carried out when said display image is shown with all the pixel electrodes of the liquid

crystal panel during the predetermined period (which is within one frame period) and is a moving image".

Claims 51-53 and 55-58 are dependent on the rejected base claim 114 and therefore inherit the deficiencies thereof.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 57 and 114 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akimoto et al (U.S. Patent No. 6,329,973) in view of Inoue (E.P. 0,361,471).

As to claim 114, Akimoto discloses a liquid crystal display device including a liquid crystal panel in which a plurality of signal lines (45) for transmitting display data and a plurality of scanning lines (50) for transmitting controlling signals being laid out vertically and horizontally, a pixel electrodes (49) being arranged at intersections of the signal lines (45) and the scanning lines (50) via switching elements (48); see Figure 2. Akimoto teaches the device having a hold control function (i.e. function of still image) in which an image an image to be displayed being kept output in one entire frame period (i.e. the period that still image scans from a first row and a eighth row), and an impulse control function (a function of moving picture) in which an image to be displayed being output in a predetermined period (i.e. a period that moving image from a third row to a sixth row) within one frame period (a period from a first row to eight row); see Figure 3 and see column 3, lines 22-27, column 5, lines 11-15.

Akimoto teaches start timing of the first period being sequentially shitted in units of pixel electrodes connected to each of the scanning lines (see column 5, lines 10-65). Akimoto teaches wherein the length of the first period is equal to that of one frame period (i.e. the period that still image scans from a first row and a eighth row), wherein said hold control is carried out when said display image is shown with all of the pixel electrodes of the liquid crystal panel and is a still image, and wherein said impulse control is carried out when said display image is shown with all of the pixel electrodes of the liquid crystal panel during the predetermined period and is a moving image (see Figure 3 and see column 4, line 66 through column 5,line 10).

Akimoto does not mention black data being output during a remaining period of the first period. In same field of endeavor (i.e. still and moving image), Inoue teaches using black data (black data signal $I_B$ ) applied to selected scanning electrodes ($I_B$ - $S_s$) in a certain pixels not changing the black state formed in the phase $t_1$ . Akimoto teaches applied the black data as same way as applicant disclosed device desribed on page 41, line 11-12 of the specification (i.e. writes black data in the second pixels regions 22 as the reset data). This reads on black data in output during remaining period within the first period as recited in the claim. Therefore, it would have been obvious to one of ordinary skill in the art at the invention was made to have used black data as taught by Inoue to the pixel electrodes of Akimoto so as to improve smoothness in display image and scroll display image as well as preventing flicker (see page 4, lines 12-24 of Inoue).

As to claim 57, Akimoto clearly teaches the switching elements (48) being polysilicon TFTs (Thin Film Transistor).

7. Claims 51-52 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akimoto in view of Inoue, as applied to claim 114 and further in view of Matsuzaki et al (U.S. Patent No. 5,644,332).

As to claim 51, note the discussion of Akimoto and Inoue above, Akimoto and Inoue do not mention the holding control being switched to the impulse control in the case where a ratio of the moving image to all the display data exceeding a predetermined value. Matsuzaki teaches that "when the total number of scan lines on

the display screen of the FLCD 26 is equal to 1312, if N1 = 1000 and the count value of the counter 513 is larger than N1, it is detected that the display mode which is executed by the CPU 11 is scrolled display mode" (see column 8, lines 13-17). Thus, Matsuzaki clearly teaches switching to the moving mode (i.e. scrolling display mode) from the still image (i.e. display mode) once the display data exceeds a predetermined value (i.e. 1000). This reads on the claimed limitation " the holding control being switched to the impulse control in the case where a ratio of the moving image to all the display data exceeding a predetermined value" as recited in claim. Therefore, it would have been obvious to one of ordinary skill in the art at the invention was made to have provided the teaching of switching from the still image to moving image as taught by Matsuzaki to the moving image device of Akimoto as modified by Inoue so that a rewriting operation performs at a relatively high speed on the whole display screen (see column 2,lines 30-44 of Matsuzaki).

As to claim 52, the limitation "when the display data makes changes for over a period of two or more frame" is taught by Matsuzaki. For example, Matsuzaki teaches that an image is to be moved if N1 is greater than 1000. Thus if N1 = 2624 which is twice of scan lines on the screen or two frames, then the image is moving from the display mode. This reads on the claimed limitation.

As to claim 58, this claim is analyzed as previously discussed with respect to claim 52 above since it recites similar limitations as claim 51 does.

8. Claim 53 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akimoto in view of Inoue, as applied to claim 114 and further in view of Numao (U.S. Patent No. 5,103,328).

As to claim 53, note the discussion of Akimoto and Inoue above, Akimoto and Inoue do not mention a shutter facing the liquid crystal display panel. Numao teaches a shutter (21) inserted between a matrix display panel 20 and a light source 19; see Figure 2 and see column 4, lines 25-27. Thus, Numao clearly teaches the shutter (21) faces to liquid crystal panel (20) as broad claimed language. The claim does not required the shutter arranged on the front surface of the liquid crystal. Therefore, it would have been obvious to one of ordinary skill in the art at the invention was made to have added the shutter as taught by Numao to the liquid crystal panel of Akimoto as modified by Inoue so as to prevent the display from flickering when the image is moving; see column, 2, line 66 to column 3, line 12 of Numao.

9. Claims 55-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akimoto in view of Inoue, as applied to claim 114 in view of Terasaki (U.S. Patent No. 5,844,540).

As to claims 55-56, note the discussion of Akimoto and Inoue above, Akimoto and Inoue do not mention the brightness of the backlight being increased in the impulse control than in the hold control. Terasaki teaches 1) a user can manually adjust the brightness of the display via backlight (see column 10,lines 9-12) 2) the brightness of slow motion reproduction and still reproduction is recognized (see column 29-34) 3)

brightness of the video image of the television system (moving image) and character image CG (still image) can be adjusted (see column 28,line 1-39). Thus, Terasaki clearly suggests that the brightness of the moving image and the still image can be either adjusted different from each other through the PWM dimmer section (i.e. backlight can be increased through the PWM in video mode) or adjusted equally. Therefore, it would have been obvious to one of ordinary skill in the art at the invention was made to have added the PWM dimmer section as taught by Terasaki to the backlight of Akimoto as modified by Inoue so that an occurrence of flicker and flutter can be prevented effectively (see column 6, lines 32-40 of Terasaki).

### *Allowable Subject Matter*

10. Claim 60 is allowed.

### *Response to Arguments*

11. Applicant's arguments with respect to claims 51-53, 55-58 and 114 have been considered but are moot in view of the new ground(s) of rejection.

In view of amendment , the reference of Inoue has been added for new ground rejection.

As to rejection under 45 U.S.C. 112, first paragraph , as failing to comply with the written description requirement, applicant states that "Further textural support for claim 114, as well as the amendments to the claim, can be found at least at pale

41,lines 12-14 of the specification". However, page 41, lines 12-41 of the specification simple discloses a black data written in the second pixel regions 22, but does not discloses the limitation the impulse control is carried out when said display image is shown with all the pixel electrodes of the liquid crystal panel during the predetermined period (which is within one frame period) and is a moving image". No where in the specification describes the limitation above.

As to the rejection under 35 U.S.C 103(a), applicant argues that the third row to sixth row, and the first row to the eighth row, however, are not timing period, as asserted by the Examiner, but instead the actual lines of pixels used to display image. Examiner would like the present his point of view as follows. All the pixels from the third row to sixth row and the first row the eighth row are scanned in predetermined periods . These scanning periods in Akimoto are timing period, the pixels will not display the image without scanning.

***Inquiries***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chanh Nguyen whose telephone number is (571) 272-7772. The examiner can normally be reached on Monday- Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chanh Nguyen
Primary Examiner
Art Unit 2675

CN
C. Nguyen
April 29, 2005